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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,701	02/05/2004	David P. Workman	020627.035	5615

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EXAMINER

KERNS, KEVIN P

ART UNIT PAPER NUMBER

1725

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/772,701

Applicant(s)

WORKMAN ET AL.

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/8/06, 3/22/06, and 5/1/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-17 and 19-24 of copending Application No. 10/983,154. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed disclosures of the methods for repairing a defect in a conductive/metallic substrate share at least the following features: placing a consumable filler slug (or slug sections having retaining lips) in contact with the defect (generally cylindrical void extending from first and second surfaces of the substrate, which would selectively be composed of the same material as the filler slug); applying a sacrificial retainer in contact with at least a

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portion of the consumable filler slug adjacent an electrode, with a portion of the sacrificial retainer melting into the pool and a portion of the retainer remaining solid to constrain the flow of the pool; transmitting electrical current (less than 200 milliseconds and less than 5% of heat input) and applying pressure between two electrodes to resistively heat the filler slug and the conductive/metallic substrate and form a substantially liquid pool that fills the defect; cooling the liquid pool to solidification under pressure between the electrodes to produce a repaired substrate of desired predetermined property (e.g. preferred grain size); removing the electrodes from the repaired substrate, which is substantially free of distortion and solidification cracks; and removing excess filler slug material to be level with the adjoining substrate surface. Although independent claims 1, 15, and 21 of the present application do not include the steps of placing, contacting, and removing at least one electrically conductive cover sheet (electrically and thermally resistive material) set forth in independent claims 1 and 14 of copending Application No. 10/983,154, it would have been obvious to one of ordinary skill in the art to exclude these additional features, as open-ended "comprising" language exists in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3, 6-15, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Gould et al. (US 6,545,244) or Meadowcroft (US 1,568,080) in view of Woolcock (GB 2 000 710).

Gould et al. disclose a method of conductive heat seam welding, in which the method includes the steps of providing one or more substrates (aluminum workpieces) with first and second surfaces, providing electrically conductive (steel) cover sheets (2,6) between the workpieces and the electrodes (12,14), transmitting uniform electrical current from a first electrode 14 to a second electrode 12 while symmetrically resistively heating and applying pressure to form a substantially liquid pool (in which one of ordinary skill in the art would have accordingly optimized the claimed current application time and heat input), cooling the liquid pool to solidification under pressure of the

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electrodes (12,14) to obtain desired predetermined properties (e.g. preferred grain size with low distortion and no solidification cracks), and removing the electrodes from contact with the metallic substrate (abstract; column 1, lines 17-24; column 2, lines 1-67; column 4, line 17 through column 9, line 67; and Figures 1-11).

Also, Meadowcroft discloses a method of electric welding, in which the method includes the steps of providing one or more substrates (aluminum workpieces 12,13) with first and second surfaces, providing electrically conductive (steel) cover sheets (14,15) between the workpieces and the electrodes (10,11), transmitting uniform electrical current from a first electrode 10 to a second electrode 11 while symmetrically resistively heating and applying pressure to form a substantially liquid pool (in which one of ordinary skill in the art would have accordingly optimized the claimed current application time and heat input), cooling the liquid pool to solidification under pressure of the electrodes (10,11) to obtain desired predetermined properties (e.g. preferred grain size with low distortion and no solidification cracks), and removing the electrodes from contact with the metallic substrate (page 1, lines 49-88; page 2, lines 10-130; page 3, lines 1-40; and Figures 1 and 2).

Neither Gould et al. nor Meadowcroft discloses that their methods are used for repairing a defect in a substrate by using a consumable filler slug in the defect in combination with resistance welding.

However, Woolcock discloses a method for repairing a defect (plugging a hole to form a weld joint) in a substrate, in which the method includes providing a metal filler plug within the opening of the substrate prior to conducting resistance welding through

electrode, thus fusing the plug in the opening, such that the method is advantageous for fusing a plug into an opening via an interference fit while leaving a smooth joint (abstract; page 1, lines 36-106 and 118-130; page 2, lines 1-57; and Figures 1-8).

It would have been obvious to one of ordinary skill in the art at the time the applicants' invention was made to modify either of the welding methods disclosed individually by Gould et al. and Meadowcroft, by repairing a defect (plugging a hole to form a weld joint) in a substrate by using a consumable filler slug in the defect in combination with resistance welding, as taught by Woolcock, in order to fuse a plug into an opening via an interference fit while leaving a smooth joint (Woolcock; abstract; page 1, lines 62-66 and 91-93; and page 2, lines 46-57).

Allowable Subject Matter

6. Claim 21 would be allowable if rewritten or amended to overcome the double patenting rejection(s) set forth in this Office action (see section 2).

7. Claims 2, 4, 5, 16, 18, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if rewritten or amended to overcome the double patenting rejection(s) set forth in this Office action (see section 2).

Response to Arguments

8. The examiner acknowledges the applicants' amendments received by the USPTO on 3/8/06, 3/22/06, and 5/1/06. These amendments overcome prior objections to the abstract and specification, as well as prior 35 USC 112, 2nd paragraph rejections. Prior 35 USC 103(a) rejections based on the Heckethorn and Sofue et al. references have been withdrawn as a result of the applicants' amendments and remarks, and additional allowable subject matter has been distinguished from the prior art. However, new double patenting rejections (see section 2) and 35 USC 103(a) rejections (see section 5) have been raised upon further consideration. Claims 1-21 remain under consideration in the application.

9. Applicants' arguments with respect to claims 1, 3, 6-15, 17, and 20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3,934,107 is also cited in PTO-892.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns
Primary Examiner
Art Unit 1725

Kevin Kerns 5/6/06

KPK

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May 6, 2006